

# The Campus Fire Marshal

By Alan Sactor



**H**ave you ever thought about what it's like to be the fire official at a major university? Think about this: tens of thousands of students—many of whom are residents; thousands of faculty and staff; millions of dollars in construction and life safety systems to review; a number of different types of buildings to inspect, including those with energy-generating equipment; a multitude of visitors to stadiums, arenas, and large events; a critical role in active threat management; and even having to meet the challenges of fire safety in off-campus student housing. That's not to mention the need to assess the hazards and risks for cutting-edge research—some of which can push the code to the limit—with the university's reputation and prestige on the line. The role of the campus fire marshal has become more complex and diverse in the last two decades. Today's campus fire official can be responsible for what is essentially a city with many unique challenges.

## **AUTHORITY AND RESPONSIBILITY**

Campus fire safety has grown into a specialized area of fire protection, with the campus fire marshal becoming a common position. Twenty years ago, there were very few colleges or universities that had fire marshals. There certainly were campus fire prevention programs with dedicated and committed staff, but few had authority beyond what was provided by their administration. Today, more campus fire marshals, mostly at state schools, have legal authority from the state fire marshal either through the law, memorandums of understanding, or other agreements. This would include campuses such as the University of

Oklahoma, the University of Maryland, Georgia Tech, Texas A&M, and the University of California system campuses. A significant advantage for campuses that serve as their own authority having jurisdiction (AHJ) is the ability to ensure that facilities are designed to meet the needs that serve the institution's mission, especially in the area of research.

Campus fire safety as it applies to research and development is dynamic, sometimes without prescribed codes and standards to rely on for guidance. The campus fire official must make detailed hazard and risk assessments when faced with a proposal for a grant, new research start-ups, or modifications to existing research by principal investigators (PIs). The research community consists of talented individuals whose research grants are highly sought, bringing the campus significant funding and prestige branding. Many people envision a college laboratory as a collection of students performing tabletop experiments with Bunsen burners heating samples in test tubes.

Undergraduate labs often resemble this vision; but more and more, campus laboratories are performing grant-driven research that utilizes more exotic hazardous materials, including pyrophoric liquids and gases, water-reactive solids, and highly toxic gases. Campus fire officials are tasked with assessing the processes for hazard analysis and standard operating procedures, and with researching a variety of codes to verify compliance. In cases where a campus fire marshal has the authority, equivalencies for code requirements may be evaluated for approval.

Standards such as NFPA 45, Standard on Fire Protection for Laboratories Using Chemicals, and NFPA 55, Compressed Gases and Cryogenic Liquids Code, are commonly used by campus fire officials to gain fire safety compliance. In jurisdictions where the 2018 edition of the International Fire Code (IFC) is used, a new chapter 38 on higher education laboratories has been added to address this unique need in higher education institutions. The development of the new chapter was the result of the leadership and work of campus fire officials. IFC chapter 38 is an excellent example of campus fire officials using their specialized expertise to

work within the consensus code development process to address the need to safely accommodate research activities. The chapter increases the maximum allowable quantities (MAQ) of hazardous materials—or in some cases the use of previously prohibited materials—in older non-sprinklered research buildings, by increasing equivalent safeguards.

### **FINDING COMMON GROUND AMID HAZARDS**

The nature of hazards associated with research in laboratories makes them a focus of attention for campus fire officials as well as laboratory safety professionals. Finding common ground with safety precautions and the understanding of hazards associated with their processes is still delicate work in the research environment. Despite close working collaboration and specialized training with lab workers, fires do occur within campus laboratories. In addition to the inherent fire hazards of flammable chemicals, gases, pyrophorics, and other materials in various physical states, a significant number of fires are due to electrical causes. Faulty appliances igniting flammable vapors, improper fire safety and grounding measures with electrical equipment fabricated in the lab, and unsupervised processes are factors that have contributed to laboratory fires. Many educational facility managers are probably familiar with the electrical and power issues associated with some research, especially high-energy research. Engineering measures such as incorporation of toxic gas monitoring systems can be attributed to preventing lab fires or limiting damage from an occurrence. Implementing campus facility management policies on researcher access to building electrical systems is also helpful.

Off-campus housing may not be directly related to an educational facility manager's responsibilities, but it is a challenge for campus fire officials. Even though off-campus housing is generally not within the jurisdiction of the campus fire official, it is where students live. Off-campus housing is worth mentioning because, unfortunately, it is the place where most student fire fatalities occur. It also demonstrates the extent to which the installation, testing, and maintenance of fire protection systems—along with educational programs and enforcement—have improved fire safety in on-campus residential facilities.

### **AND OFF-CAMPUS, TOO**

Nearly all campus fire safety officials wrestle with the challenge of improving the safety of students residing off campus. The rules that apply on campus and the advanced fire protection features and systems (including sprinklers) that give on-campus residents added measures of safety, are typically much less prevalent in

off-campus dwellings and multifamily living conditions. According to U.S. Fire Administration statistics (for the years 2000-2015), 90 percent of fatal campus fires occur in off-campus housing with smoking being the leading cause (29 percent). Smoking in campus residence halls is typically prohibited. Alcohol, another item that is typically prohibited or restricted in on-campus housing, was a factor in 78 percent of fatalities. Working smoke alarms were present in only 42 percent of off-campus fatal fires.

Most students who choose to reside off campus are more focused on freedom and independence from campus regulations and/or lower costs than they are on the fire safety features of their dwellings. Campus fire officials approach this challenge through education and relationships. This includes, but is not limited to, educating the students and their parents seeking housing off campus on the basic fire safety features of working smoke alarms, adequate exits, and safe electrical and heating systems. Establishing working relationships with landlords to encourage them to make necessary improvements within their rental properties can be effective.

Fraternities and sororities, where officially recognized by the college or university, can often be included in on-campus fire safety education programs and benefit from campus fire safety official expertise. Organizations such as the Center for Campus Fire Safety have worked diligently through panel discussions at Campus Fire Forums, where innovative outreach programs are discussed, such as one that links emergency medical services (EMS) calls with fire safety assessments run by the City of Berkeley, California Fire Department/EMS. The need to reduce off-campus fire deaths and emergencies will be a top priority for years to come.

The year 2019 marks two decades since the first national forum on campus fire safety, an invitation event held in 1999 with campus and public fire officials, hosted by NFPA and the U.S. Fire Administration. As a result of that forum, the discussion and sharing of information among campus fire officials has increased dramatically. From building construction and life safety systems to hazardous materials and public education, campus fire officials have become more prepared to fulfill their role in addressing the myriad of challenges presented by the college and university environment. §

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